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10/556,487	11/15/2006	Williamson Z. Bradford	INTM-035	1301

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EXAMINER

BUNNER, BRIDGET E

ART UNIT

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1647

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/556,487

**Applicant(s)**

BRADFORD ET AL.

**Examiner**

Bridget E. Bunner

**Art Unit**

1647

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 5, 6, 13-17 and 45-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 6, 13-17, 45-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Application, Amendments and/or Claims***

The amendment of 09 November 2005 has been entered in full. Claims 1, 5, 6, 13-17 are amended. Claims 3-4, 7-12, and 18-44 are cancelled. Claims 45-50 are added.

Claims 1-2, 5-6, 13-17, and 45-50 are under consideration in the instant application.

### ***Claim Objections***

1. Claims 1-2, 6, 14-17, 45, 47-50 are objected to because of the following informalities:
  - 1a. Claims 1-2, 6, 14-17, 45, and 47-50 use the acronym "IFN- $\gamma$ " without first defining what it represents in the independent claims. While the claims can reference acronyms, the material presented by the acronym must be clearly set forth at the first use of the acronym.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112, second paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 2, 5, 6, 13-17, and 45-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 1, 2, 5, 6, 13-17, and 45-50 are indefinite because the elements recited in the claim do not constitute proper Markush groups. The claims are indefinite in the alternative use of "and/or" because it is not clear what controls which of these limitations (see for example, claims 1 and 2, line 3). See MPEP § 2173.05(h).

4. Claims 1, 2, 5, 6, 13-17, and 45-50 are indefinite because the claims do not have a step that clearly relates back to the preamble. For example, there is no step indicating that probability of survival has increased.
5. Claims 13 and 46 recite the limitation "individual" in line 2. There is insufficient antecedent basis for this limitation in the claims. Claims 13 and 46 depend from claims 1 and 2, respectively, which recite "patient", rather than "individual".

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-2, 5-6, 13-17, 45-50 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-35 of copending Application Nos. 10/525,583. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to a method of

treating idiopathic pulmonary fibrosis in a patient comprising administering to the patient an effective amount of IFN- $\gamma$ , wherein the patient has a forced vital capacity that is at least about 55% of the predicted normal value. Both sets of claims are also directed to a method of increasing the probability of survival of a patient suffering from idiopathic pulmonary fibrosis comprising administering to the patient an effective amount of IFN- $\gamma$ , wherein the patient has a forced vital capacity that is at least about 55% of the predicted normal value (see for example, claim 2 of the instant application and claim 11 of '583). Claim 13 and 46 of the instant application and claims 2, 12, 20 of '583 recite administering a corticosteroid to the individual. Claims 15, 16, and 17 of the instant application and claims 8-10, 16-18, 24-26, and 32-34 of '583 recite that the IFN- $\gamma$  is administered in a dose of about 200  $\mu\text{g}$ , is administered three times weekly, and is administered by subcutaneous administration. The claims of the '583 application are silent as to the length of time the IFN- $\gamma$  is administered and the dosage amount per body weight. However, the specification of '583 teaches that the IFN- $\gamma$  can be administered from about eight months to about 1 year, from about 1 year to about 2 years, or from about 2 years to about 4 years, or more (pages 10-11, [0051]), which meets the limitations of claim 6 and 45 of the instant application. The specification of '583 also teaches that when the dosage is 200  $\mu\text{g}$  IFN- $\gamma$  per dose, the amount of IFN- $\gamma$  per body weight is in the range of from about 4.4  $\mu\text{g}$  IFN- $\gamma$  per kg body weight to about 1.48  $\mu\text{g}$  IFN- $\gamma$  per kg body weight (page 9, [0045]), meeting the limitations of claims 14 and 47 of the instant application. Thus, the instant claims are not patentably distinct over the co-pending claims in Application No. 10/525,583.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 1-2, 5-6, 13-17, 45-50 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-35 of copending Application No. 11/487,733. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to a method of treating idiopathic pulmonary fibrosis in a patient comprising administering to the patient an effective amount of IFN- $\gamma$ , wherein the patient has a forced vital capacity that is at least about 55% of the predicted normal value. Both sets of claims are also directed to a method of increasing the probability of survival of a patient suffering from idiopathic pulmonary fibrosis comprising administering to the patient an effective amount of IFN- $\gamma$ , wherein the patient has a forced vital capacity that is at least about 55% of the predicted normal value (see for example, claim 2 of the instant application and claim 11 of '733). Claim 13 and 46 of the instant application and claims 2, 12, 20 of '733 recite administering a corticosteroid to the individual. Claims 15, 16, and 17 of the instant application and claims 8-10, 16-18, 24-26, and 32-34 of '733 recite that the IFN- $\gamma$  is administered in a dose of about 200  $\mu\text{g}$ , is administered three times weekly, and is administered by subcutaneous administration. The claims of the '733 application are silent as to the length of time the IFN- $\gamma$  is administered and the dosage amount per body weight. However, the specification of '733 teaches that the IFN- $\gamma$  can be administered from about eight months to about 1 year, from about 1 year to about 2 years, or from about 2 years to about 4 years, or more (pages 10-11, [0051]), which meets the limitations of claim 6 and 45 of the instant application. The specification of '733 also teaches that when the dosage is 200  $\mu\text{g}$  IFN- $\gamma$  per dose, the amount of IFN- $\gamma$  per body weight is in the range of from about 4.4  $\mu\text{g}$  IFN- $\gamma$  per kg body weight to about 1.48  $\mu\text{g}$  IFN- $\gamma$  per kg body weight (page 9, [0045]), meeting the

limitations of claims 14 and 47 of the instant application. Thus, the instant claims are not patentably distinct over the co-pending claims in Application No. 11/487,733.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 112, first paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1, 5, 6, 13-17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of increasing survival time or decreasing the risk of death due to idiopathic pulmonary fibrosis comprising administering IFN- $\gamma$ , *does not reasonably provide enablement for* a method of treating a patient suffering from idiopathic pulmonary fibrosis comprising administering IFN- $\gamma$ . The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The claims of the instant application are broadly directed to a method of treating a patient suffering from idiopathic pulmonary fibrosis comprising administering to the patient an effective amount of IFN- $\gamma$ , wherein the patient has a forced vital capacity that is at least about 55% of the predicted normal value and/or has a carbon monoxide diffusing capacity that is at least about 30% of the predicted normal value.

The specification of the instant application teaches that “the terms “treatment”, “treating”, and the like, refer to obtaining a desired pharmacologic and/or physiologic effect” (page 8, [0041]). The specification states that “the effect may be prophylactic in terms of completely or partially preventing a disease or symptom thereof and/or may be therapeutic in terms of a partial or complete cure for a disease and/or adverse affect attributable to the disease” (page 8, [0041]). The specification continues to teach that “treatment” refers to any treatment of a disease in a mammal, particularly a human, and includes (a) increasing survival time; (b) decreasing the risk of death due the disease; (c) preventing the disease from occurring in a subject which may be predisposed to the disease but has not yet been diagnosed as having it; (d) inhibiting the disease, i.e. arresting its development (e.g. reducing the rate of disease progression); and (e) relieving the disease, i.e. causing regression of the disease.

The specification provides guidance and examples showing that administration of IFN- $\gamma$  to individuals suffering from idiopathic pulmonary fibrosis (IPF), wherein these individuals had a forced vital capacity that was at least 55% of the normal predicted value, resulted in an increase in survival time, and accordingly reduced the risk of death of these individuals (page 25, [00112]; page 28, [00122] and Table 6; page 34, [00136])). However, there is no guidance or examples in the specification that shows that IPF can be prevented in any subject, including any individual who may be at risk for development of IPF. It is known in the art that IPF is a disease of unknown etiology, and little information is available regarding the course and natural history of IPF (see Condos *et al*, US 6,964,761, column 1, lines 25-26; see also Aggarwal *et al*, *Expert Opinion on Pharmacotherapy*, Vol. 1, pages 1423-1427, 2000, especially page 1423). Because the underlying causes of IPF are unknown, a person of ordinary skill in the art would not be able



to predict which individuals are at risk of developing IPF, and thus would not be able to practice any method of preventing IPF. Furthermore, although the specification shows that IFN- $\gamma$  administration increases survival time and reduces the risk of death of individuals having IPF, there is no guidance or examples showing that IFN- $\gamma$  administration arrests the development of disease or reduces the rate of disease progression, or causes actual regression of the disease. Given the broadest reasonable interpretation, arresting the development of a disease or reducing the rate of disease progression, or regression of a disease could comprise inhibition or elimination of the underlying causes of disease, or a reduction in the symptoms of the disease. Although the specification shows an increase in survival of IPF patients after IFN- $\gamma$  administration (page 25, [00112]; page 34, [00136]), the specification does not show that any symptoms of disease were reduced, or that disease development has been halted or regressed. As noted above, the art teaches unpredictability regarding the underlying causes of IPF, and therefore a person of ordinary skill in the art would not predict that the claimed method would inhibit disease development or cause regression of the disease.

Therefore, due to the excessive breadth of the claims in that Applicants have defined “treating” to mean preventing IPF, or inhibiting disease progression or causing regression of disease, the lack of guidance or examples showing that IPF can be prevented in patients “at risk” of developing IPF or of inhibiting disease progression or affecting disease regression, and the unpredictability inherent in the art regarding the underlying causes of IPF, a person of ordinary skill in the art would require further, undue experimentation in order to practice the claimed method in a manner commensurate in scope with the claims.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-2, 5-6, 14-17, and 45, 47-50 are rejected under 35 U.S.C. 102(a) as being anticipated by "Idiopathic Pulmonary Fibrosis; New IPF Therapies Highlighted at European Respiratory Society Meeting" (Drug Week November 22, 2002, page 30). This article teaches a method of treating idiopathic pulmonary fibrosis comprising administering an effective amount of interferon gamma-1b. The article discloses that 200 micrograms of interferon gamma-1b are subcutaneously administered three times per week for 60 weeks (5<sup>th</sup> full paragraph). Although the article is silent as to the body weights of the patients, the administered dosage of IFN- $\gamma$  (200  $\mu$ g) would overlap with the dosage amounts recited in the instant claims. For example, with a dosage of 200  $\mu$ g of IFN- $\gamma$  and a body weight of about 45 kg (or 99 lbs) to about 136 kg (300 lbs), this would result in a dosage range of 4.4  $\mu$ g/kg body weight to about 1.47  $\mu$ g/kg body weight. Furthermore, since the reference discloses administering interferon gamma-1b to the same patient population as required by the instant claims, increasing the probability of survival must have been inherently occurring, absent evidence to the contrary (see *Ex parte Novitski*, 26 USPQ2d 1389 (BPAI 1993) ; see also *Integra LifeSciences I Ltd. V. Merck KGaA*, (DC SCalf)

50 USPQ2d 1846; see *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)).

10. Claims 1-2, 5-6, 13-17, 45-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Ziesche et al. (New England J Med 341: 1264-1269, 1999).

Ziesche et al. teach a method of treating idiopathic pulmonary fibrosis comprising administering an effective amount of interferon gamma-1b. Ziesche et al. disclose that 200 µg of interferon gamma-1b are subcutaneously administered three times per week for one year (page 1265, col 1, 3rd full paragraph; page 1265, col 2). Ziesche et al. also teach that the corticosteroid, prednisolone, is administered daily (page 1265, col 1, third full paragraph). Ziesche et al. teach that the subject has at least a baseline forced vital capacity of 67-68% (page 1265, Table 1). Although Ziesche et al. is silent as to the body weights of the patients, the administered dosage of IFN-γ (200 µg) would overlap with the dosage amounts recited in the instant claims. For example, with a dosage of 200 µg of IFN-γ and a body weight of about 45 kg (or 99 lbs) to about 136 kg (300 lbs), this would result in a dosage range of 4.4 µg/kg body weight to about 1.47 µg/kg body weight. Furthermore, since Ziesche et al. administer interferon gamma-1b to the same patient population as required by the instant claims, increasing the probability of survival must have been inherently occurring, absent evidence to the contrary (see *Ex parte Novitski*, 26 USPQ2d 1389 (BPAI 1993) ; see also *Integra LifeSciences I Ltd. V. Merck KGaA*, (DC SCalif) 50 USPQ2d 1846; see *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)).

11. Claims 1-2, 5, 13-16, 46-49 are rejected under 35 U.S.C. 102(c) as being anticipated by Condos et al. (U.S. Patent 6,964,761).

Condos et al. teach a method of treating idiopathic pulmonary fibrosis by administration of aerosolized interferon (IFN)-gamma. Specifically, Condos et al. teach administration of IFN-gamma to patients suffering from IPF (column 1, lines 17-21, 49-67) with a forced vital capacity of 50% - 90% of predicted baseline (column 6, lines 37-38). Condos et al. teach that the IFN-gamma is administered in doses ranging from about 250 µg to 750 µg three times weekly (column 2, lines 1-5), and further administration of a corticosteroid (column 5, lines 16-21; claims 9-10). Condos et al. disclose that lower doses of IFN-gamma may be given depending upon the efficiency of the nebulizer (column 2, lines 5-6). Additionally, since Condos et al. administer IFN-gamma to the same patient population as required by the instant claims, increasing the probability of survival must have been inherently occurring, absent evidence to the contrary (see *Ex parte Novitski*, 26 USPQ2d 1389 (BPAI 1993) ; see also *Integra LifeSciences I Ltd. V. Merck KGaA*, (DC SCalf) 50 USPQ2d 1846; see *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)). Although Condos et al. is silent as to the body weights of the patients, the administered dosage of IFN-gamma (about 250 µg or less) would overlap with the dosage amounts recited in the instant claims. For example, with a dosage of 250 µg or less of IFN-gamma and a body weight of about 45 kg (or 99 lbs) to about 136 kg (300 lbs), this would result in a dosage range of 5.56 µg/kg body weight to about 1.8 µg/kg body weight, meeting the limitations of claims 14 and 47 of the instant application.

***Conclusion***

No claims are allowable.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

**\*\* Bouros et al. Expert Opin Biol Ther 6(10): 1051-1060, 2006** (post-filing date review that discusses interferon- $\gamma$ 1b for the treatment of IPF; Table 1 on page 1054 summarizes all the clinical trials of IFN- $\gamma$ 1b for the treatment of IPF)

Van Den Hazel (U.S. Patent 6,958,388; discloses interferon gamma variants and methods of treating idiopathic pulmonary fibrosis; column 44)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bridget E. Bunner whose telephone number is (571) 272-0881. The examiner can normally be reached on 8:30-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath Rao can be reached on (571) 272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BEB  
Art Unit 1647  
23 March 2009

/Bridget E Bunner/  
Primary Examiner, Art Unit 1647